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CANADIAN HORTICULTURAL HISTORY

an interdisciplinary journal

HISTOIRE DE L'HORTICULTURE AU CANADA

revue interdisciplinaire

Vol. 1, No. 3, 1987

CENTRE FOR CANADIAN
HISTORICAL HORTICULTURAL STUDIES
ROYAL BOTANICAL GARDENS

CANADIAN HORTICULTURAL HISTORY

an interdisciplinary journal

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The Centre for Canadian Historical Horticultural Studies (CCHHS) was established at the Royal Botanical Gardens, Hamilton, Ontario, in 1979 through an endowment from the Dunington Grubb Foundation. The functions of CCHHS are to collect documentation on all aspects of the history of Canadian horticulture and to facilitate publication of original research in its journal Canadian Horticultural History .

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Le Centre for Canadian Historical Horticultural Studies (CCHHS) a été créé au Royal Botanical Gardens de Hamilton (Ontario) en 1979 grâce à une donation de la fondation Dunington Grubb. Le CCHHS a pour mission de recueillir des documents sur tout ce qui concerne l'horticulture canadienne et de permettre la publication d'études originales dans sa revue intitulée Histoire de l'horticulture au Canada

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THE HORTICULTURAL ODYSSEY OF ISABELLA PRESTON

by

Edwinna von Baeyer
131 Sunnyside Ave., Ottawa, Ont. K1S OR2

Abstract

Isabella Preston (1881-1964) was one of Canada's foremost breeders of ornamental plants. This biographical sketch charts her horticultural life from her beginnings in Lancaster, England, to her death in Georgetown, Ontario, eighty-three years later. A self-taught hybridist, Miss Preston's first breakthrough was in 1916, when a judicious cross, performed at the Ontario Agricultural College, produced the acclaimed 'George C. Creelman' lily. She joined the Central Experimental Farm's Horticulture Division in 1920. From then until she retired in 1946, Miss Preston originated nearly 200 hybrids — scattered among roses, lilacs, Siberian iris, Rosybloom crabapples, and lilies. Her lily hybrids alone guaranteed her horticultural fame, although awards and recognition came to nearly every breeding program she attempted. By the 1940s, Miss Preston was characterized by her colleagues as the "dean of hybridists."

Abstract

Isabella Preston (1881-1964) est l'une des figures les plus importantes de l'hybridation des plantes ornementales au Canada. Cette courte biographie retrace sa carrière horticole, de sa naissance à Lancaster (Angleterre) jusqu'à sa mort à Georgetown, en Ontario, 83 ans plus tard. Autodidacte, Mlle Preston connut son premier vrai succès en 1916, lorsqu'un croisement, réalisé au *Ontario Agricultural College*, produisit le très célèbre lis 'George C. Creelman'. En 1920, elle se joignit à la Division horticole de la Ferme expérimentale d'Ottawa. A partir de ce moment jusqu'à sa retraite en 1946, Mlle Preston créa près de 200 hybrides, parmi lesquels on retrouve des rosiers, des lilas, des iris de Sibérie, des pommettiers de la série "Rosybloom" et des lis. A eux seuls, ses hybrides de lis lui ont procuré une renommée dans le monde de l'horticulture. Tous ses programmes d'hybridation lui valurent cependant estime et trophées. Dès 1940, les collègues de Mlle Preston la consacrèrent "doyenne des hybrideurs".

After World War II, a Japanese admiral was brought to the United States as part of a friendship promotion program. He was asked if there was any special attraction he would like to see — Niagara Falls perhaps? The admiral thanked his hosts very politely and then answered (in rough translation), "I would really like to travel to Canada to meet Miss Isabella Preston." He was a lily enthusiast. [1]

Lilies were the main catalyst in Miss Preston's transformation from an English immigrant to Canada with an interest in horticulture to a world-renowned hybridist. Not only did Miss Preston originate nearly 200 hybrids in a twenty year period, she also successfully pursued a career which began late in life, by today's standards, and which apparently did not encounter major impediments despite its being in a male-dominated profession.

Tradition de Céline Arsenault, Jardin botanique de Montreal

Her story is pieced together from the primary sources of her published writings and professional correspondence, from interviews with former colleagues, Georgetown neighbours, and relatives, and from a wide variety of secondary sources. She was a reticent woman who preferred her work to speak for her life. Proud of her achievements, Miss Preston hopefully would approve this chronicle of her horticultural odyssey.

THE BEGINNING 1881 - 1912

The details of Miss Preston's early years in Lancaster are sketchy. She was born (September 4, 1881) into a thriving middle-class family. Her father was a silversmith and hardware merchant in this bustling market centre. [2] "A shy, little mouse," and very attached to her parents, she was the youngest of five children.

Later in life, she stated that she probably had been "born with green fingers,"[3] and that her parents fostered her early love for gardening. Her parents were enthusiastic gardeners who, in the days of affordable garden help, nevertheless did much of the work themselves in the garden. [4] Thus it is perhaps not surprising that Miss Preston's earliest gardening memory was not of the ethereal beauty of the rose, but rather running after her father through muddy earth, picking up potatoes as fast as her father dug them up. [5] She also admitted that as far back as she could remember, she had a flower bed of her own.[6]

As fitting for someone whose later horticultural fame was due to the lily, another early garden memory was of this flower:

> My mother called it a Turk's Cap lily (*L. martagon*) and the name puzzled me very much as I could not understand how a Turk could wear such a queer shaped cap. I did not really like the flower but I used to be very interested when a visitor noticed it and smelled it as he or she invariably covered the tips [sic] of his nose with pollen. Another childish memory... is seeing *L. speciosum* growing in a pot in a friend's house, and wanted my mother to get some for me to grow.[7]

Her formal education was typical for a 19th century girl of her class. She was sent away at the age of eight to a boarding school in Liverpool, evidently hating the separation from her parents.[8] In addition to the normal academic subjects, Miss Preston was also taught "Household arts" as well as the piano. She apparently was introduced to the highly popular game of tennis but found it"...a great waste of time when there was work to do in the garden."[9]

At the age of eighteen she matriculated, writing the exam set by the University of London.[10] Three years later when her father died, she assumed all the household duties and looked after her mother and older sister Margaret.[11] She continued to be devoted to the garden. In 1906 when she was twenty-five, Isabella took a short course at Swanley Horticultural College, a women's college, constituting nearly her entire formal education in horticulture.

In 1912 Miss Preston's life was radically affected by her sister Margaret's decision, after their mother died, to accept a position as music teacher at a girls' school in Guelph, Ontario. Margaret, a dynamic, outgoing type, persuaded Isabella to close up the family home and come with her to Canada for a year "to see if I liked the life."[12]

Miss Preston carried considerable cultural and horticultural "baggage" with her into her new life in Canada. The English home garden had undergone a transformation in the late 1800s and early 1900s. Influenced by the 1883 publication of *The English Flower Garden* by the vocal garden revolutionary William Robinson, the ornamental garden began softening its outlines and limiting its annual flower content in favour of hardy material. No longer was the fussy Victorian carpet bedding style *au courant*. Judicious plantings of perennials, and some annuals, in a more natural manner was the new mode. The proponents of the new style of gardening were also aided by the incredible proliferation of available plant material. Increased plant exploration in the 19th century allowed English gardens to display bulbs from Turkey, trees from China, and flowers from South America.

Women, as well as men, were encouraged to pursue amateur botanical studies and plant explorations nearer to home. By the turn of the century, it was quite common to see Sunday-afternoon plant enthusiasts eagerly compiling herbals, painting wildflower pictures, or hunting rare plants in the English countryside. Women were especially encouraged to take up gardening as an ideal exercise for their minds and bodies, and a channel for their aesthetic sensibilities.

By the time Miss Preston sailed away to Canada, the English garden, its rationalizations, design and plant composition had radically changed. It was the era of the Gertrude Jekyll-style garden — pastel portraits executed with masses of perennials, shrubs and trees — gathered from all over the world, arranged in natural groupings. The explosion of plant material was to benefit hybridizers as well, as these novelties allowed a wider gene pool to work within. The new emphasis on the flower garden also encouraged plant breeders to create more varieties of differing forms and colours. With this cultural background, her enthusiasm for gardening, and an obvious determination to persevere, Miss Preston arrived in Ontario.

GUELPH INTERLUDE 1912 - 1920

Horticultural fame seemed far away when Miss Preston arrived in Guelph. Her first job was on a fruit farm picking raspberries, plums and peaches. Miss Preston, intent on studying horticulture "to find some means of cultivating this hobby",[13] enrolled (at the age of 31) in the Ontario Agricultural College (now: the University of Guelph). Women had been encouraged to garden as an avocation, but not as a vocation. Family friends tried to discourage this interest. One friend said, "If you *have* to do something agricultural why not take up poultry?"[14] Undaunted, she began courses in the Department of Horticulture under Prof. J.W. Crow in the fall of 1912.

The Department of Horticulture was formerly established in 1893, nineteen years after the founding of the College. Following the objectives of the College (which existed in response to a need for a practical school of agriculture) the Department of Horticulture was oriented to specific, functional goals. Fruit and vegetable growing were the priorities.

The Department looked after twenty-three acres of lawns; four acres of vegetables, 7,000 square feet of greenhouses, and a nursery of 14,000 trees.[15] When the Horticultural Department was reorganized in 1908, J.W. Crow became Lecturer in Horticulture in charge of fruits and vegetables. He had graduated from OAC just a year before, having written his thesis on *The Systematic*

Improvement of Raspberries. Six years later when Prof. Crow took over as head of the department, plant breeding was extended to flowers.[16]

When Isabella began her courses in 1912, women were more commonplace on the OAC campus, although not as evident in the horticultural and agricultural degree programs.[17] Evidently she was not taken seriously by many of her fellow students—an attitude which changed considerably when they later dealt with her as the federal government's leading expert in ornamental horticulture.[18]

During the fall, she (according to the usual mixture of practical and theoretical course work at the OAC) also laboured in the greenhouses – earning twelve cents an hour.[19] But by the spring of 1913, she no longer seemed to be taking classes. Prof. Crow had hired her as a day labourer to look after an experiment he was running on a method of growing strawberries in hills.[20] In time Miss Preston was also given responsibility for greenhouse maintenance: repotting, seeding, planting, and later hybridizing. The vegetable gardens were also under her supervision.

Her first introduction into the mysteries of plant breeding occurred during the first year of her OAC job as she watched Prof. Crow emasculate and pollinate the flowers on dwarf pear trees. Up to that point she knew nothing about the subject. When working with iris she had to ask Crow "which was the stigmatic surface in an iris flower?"[21] She remedied this deficiency by reading "all the books in the library" on horticulture and plant breeding.[22]

Self-instruction in plant breeding was still possible in the early 1900s, for it was a relatively new science. The British tradition dated from the late 1700s, when Thomas Andrew Knight (1759-1838) effected the first systematic plant crossings. But sustained interest and practice was actually stimulated in 1899 when the Royal Horticultural Society held the first International Hybridization Conference. Attended by scientists as well as practical plant breeders, the problems of theory and practice of hybridizing were discussed. It was at this conference that Gregor Mendel's famous laws of hybridizing were first presented to an English-speaking audience – a significant discovery which had lain buried since it was first published in 1865.[23]

In America, plant breeding in the 19th century focussed primarily on fruits and vegetables. One historian has noted: "Just as nineteenth century Americans delighted in an array of novel, patented gagetry, so too they took pleasure in an extraordinary number of new plant varieties."[24] Extraordinary indeed – in the 1840s, large nurseries were offering between 200 and 400 varieties of pears alone![25] In the midst of all this activity, one man in particular was credited as the American hybridist *par excellence*. Luther Burbank's [1849-1926] tremendous strides in plant improvement and breeding attracted widespread interest. He saw his role in society as an "explorer into the infinite," as well as an educator and promotor of the profession of hybridizing:

> Its possibilities, and even its fundamental principles, are understood by few...Nothwithstanding the occasional sneers of the ignorant, these silent forces embodied in plant-life have yet a part to play in the regeneration of the race which, by comparison will dwarf into insignificance the services which steam and electricity have so far given.'[26]

Canadian plant breeding, pre-1900, was quite informal. There were dabblers, but most activity centred upon plant introductions, as agricultural department officials, nurserymen, agriculturists, academics, orchardists, and enthusiastic gardeners sought to introduce a greater range of hardy plants for our northern climate. The most intense activity was directed towards economic plants and crops, although by the late 1800s, there was a quickening of interest in the hybridization of ornamentals.

One of Canada's first renowned ornamental plant breeders was Henry H. Groff [1853-1933] of Simcoe, Ontario, who boldly proclaimed: "This is an age of hybrids..."[27] At various times in his career he was called "a wizard of horticulture," or "the Luther Burbank of Ontario." His horticultural fame stemmed from the improvement and hybridizing of one plant — the gladiolus — beginning in 1894. He took a despised semi-tropical plant with insignificant flowers and developed it into a magnificent flowering plant — 1.2 metres to 1.5 metres tall, some with "waxy blossoms as wide as a man's hand," a plant which could adapt itself to almost any climate or soil. His gladioli were "notable for their strength and constitutional vigor as for their marvellous diversity of form and colour"[28] — a tremendous achievement according to his contemporaries.

Groff annually cultivated about three acres of gladioli, retaining ten to fifteen labourers in the busy season and three permanent staff. He handled up to 50,000 seedlings in a season, and ultimately produced over one million different hybrid gladioli, although he only listed 1,600 varieties.[29] During the busy season Groff spent ten hours a day supervising plantings, making crosses, and selecting promising mature plants. These ten hours excluded his normal working day as a bank manager, a job he held until retirement.

His philosophy of hybridizing was succinct: "endless work, observation and patience."[30] He also extolled the benefits of plant breeding:

> Its successful prosecution stamps you with an air of satisfaction with your place in life by making you forget yourself. You are conscious of doing something with no limit to the possibilities of doing more and better. It takes you up and beyond and far above the trivialities of things mundane. You see with a clearer mental vision, you stand closer to the infinite.[31]

Groff not only won international awards and the esteem of his peers, he also was one of the very few Canadian hybridists to amass a fortune from his labours.

Before the first decade of the 20th century had passed, hybridization theory and technique had become quite sophisticated. Standards had been fixed, co-ordination and co-operation increased, and writings on hybridizing found a wider circulation. A small army of amateur and professional hybridists had appeared: armed with the tools of the trade — tweezers, scissors, magnifying glass, small paper bags (for protecting the pollinated flower from insect interference), plant labels, notebook and pen.

To ensure greater success, hybridists became more systematic, usually specializing by working on a particular line: disease resistant wheat, hardy hybrid tea roses, red gladiolus and so on. The importance of maintaining a varied botanical collection to ensure a large gene pool for plant experiments was increasingly recognized. Securing foreign plant material became very important.

Information expanded on how and when to effect successful crosses, how to select the most promising seedlings, how to test under different conditions, and how to record the results.[32]

Into this receptive atmosphere created by a small, but enthusiastic circle of Canadian hybridists, Miss Preston made her debut. She began in the OAC greenhouse by growing a variety of lily bulbs in order to produce seed to increase stock and to effect as many different crosses as possible.[33] She appeared to have a natural affinity for the flower, for her subsequent successful crossings were effected without the modern technological tools of chromosome counts, cytology, etc.

When Miss Preston began crossing lilies, the lily had not yet attained the pre-eminent position in the perennial border it enjoys today. Although usually associated with Medieval and Renaissance art and religious symbolism, lilies were cultivated in eastern Mediterranean countries 3,000 years ago. [34] Yet, their widespread cultivation in the western world proceeded slowly until stimulated by voyages of exploration. The first non-European lily to reach England was *Lilium canadense*, thought to have come via France from Jacques Cartier's Canadian explorations in 1535.[35] Periodically, exotic lily specimens (either plants, seeds or bulbs) found their way from the Orient, the Americas and the Indian subcontinent into European cultivation. A high-point occurred in 1862 when *L. auratum*, originally from Japan, was introduced into commerical distribution. This plant stimulated interest in lily growing, but it was difficult to establish in the average garden and many of the bulbs were diseased.[36] In 1903 the great plant hunter, E.H. Wilson, discovered the beautiful and hardy *L. regale* in China. Its introduction caused a revival of interest which (in Miss Preston's words) "...brought lilies into favor again with the gardening fraternity."[37]

The first recorded lily crossings were done by an English nurseryman Henry Groom of South London. His nursery flourished between 1840 and 1853. Perhaps charged with "gilding the lily" he answered critics in 1841:

> I may be charged by the botanist with making confusion in the genus, but I, as a florist, cannot agree with him, for I believe in obtaining new varieties. I am only developing the latent beauties of nature,which are thus wisely hidden, to excite us to further industry.[38]

The fate of these crosses and hybrids produced in the mid to late 1800s was varied and usually short-lived. For example, the most extensive early lily-breeding project was undertaken by Luther Burbank in 1875. By 1894 he had three acres of hybrid lilies, but disease and "dwindling away" significantly reduced the number commercially available.[39]

Until the introduction of Miss Preston's trumpet lily hybird, there seemed to be a lull of introductions into commercial circulation. Miss Preston's accomplishment was not an overnight feat. She crossed and reared hundreds of lilies between 1914 and 1917, and suffered set-backs such as the death of all the seedlings planted out in open ground in the 1917-18 winter. [40]

Crow and Miss Preston had developed a close, sympathetic working relationship of equals rather than a professor-student association. However, Miss Preston always acknowledged her life-long gratitude to Prof. Crow for his teaching and guidance. He obviously recognized a fellow enthusiast and relied

on her determination and evident aptitude for plant breeding. A genial give-and-take developed which coloured their partnership – as evidenced in one of Crow's letters to Miss Preston in 1915:

> Rose cuttings are nearly all rooted & potted. Also geraniums and pansies so you see we do some work—Have a few more metal labels to stick in but will then be caught up with the work you left me to do. Have only made one bad break so far as I know and that was failing to mature the late gladiolius seed in water. Kick me hard.[41]

Miss Preston was too much a lady to kick anyone, rather she vigorously applied herself to lilies. Luckily for the Canadian garden, her sister could not entice her at this time to live with her in Spartanburg, South Carolina, where Margaret was a music teacher at Converse College. Isabella refused, saying she did not want to live on non-British soil.[42]

On July 20, 1916, the historic cross was made – a cross which vaulted Miss Preston into the front ranks of North American plant hybridists. *Lilium regale* – vigorous, disease-resistant and hardy – donated pollen to the seed-parent, *L. sargentiae* – less floriferous, less hardy. Three seed pods formed. The resulting seedlings were placed in a cold frame in November, 1918, so as not to suffer the fate of the ones planted in the open in 1917. Several blossomed in 1919.[43] The resulting hybrid was named *L×princeps*,* which was considerably taller, with large, fragrant white flowers, stronger-growing, and later-blooming than either parent. Since it bloomed two weeks later, it was especially commended for the extension of the lily season. H.L. Hutt (then Professor of Horticulture Emeritus at the OAC) later wrote Isabella about his first impressions of *L×princeps*:*

> I can well remember seeing their first bloom, four and five immense white flowers on sturdy stems about three feet tall. And I thought well here is a worth while new lily. But when I happened to be at the College a week later and saw two or three of the original plants at least five feet high and bearing fifteen blooms I felt like taking off my hat, even if I did not throw it up in the air.[44]

Even seventeen years after its introduction, this lily continued to be praised. Elsie Reford, acclaimed for the design and planting of her Gaspé estate, Métis Park, wrote unreservedly in 1939 about "this splendid achievement of hybridization." This was no faint praise from a woman who regularly stocked her garden with plant material from around the world brought to her on her husband's steamships:

> ...it is difficult to speak with restrained enthusiasm, for it is a magnificent Lily – an adjective applicable to all its parts—the first season after planting sees it spring into marvellous growth and flowering with stems abundantly clothed with dark green leaves and quite equal to the great weight of the enormous blooms, which are more widely expanded than any of the other Lilies of this class, and also of a purer white—wherever they may be they will dominate in majestic beauty. All lovers and growers of Lilies are laid under a debt of gratitude to Miss Isabella Preston...[45]

Also known as *L.* x *imperiale*

In 1923 after four years of trial, stock was released into commercial circulation under the name *Lilium×princeps* 'George C. Creelman'[46] The OAC Department of Horticulture named the lily after the popular president of the OAC from 1904-1920. Even in the 1950s the Creelman lily continued to be recognized not only as a breakthrough but also as an often-used parent in contemporary hybrids.

Although there was widespread praise for the originator of such an outstanding lily, there was some confusion over what variety was released and under what name. Miss Preston strongly felt three distinctive varieties developed from this cross.[47] This impression was reinforced on a visit to the OAC in 1932 where she and the department head, Prof. MacLennan, had a difference of opinion: "They are very distinct plants," noted Miss Preston, "& *I think* must be different seedlings."[48] Subsequent detective work on her part revealed that sloppy record keeping, her resignation in 1920 and Crow's resignation in 1922 had complicated the issue. No one had recorded the number of bulbs produced in 1919, although later the flower garden foreman recalled eight bulbs in the famous cold frame. Some bulbs were given to Prof. Hutt, Crow planted a few in a friend's garden in Guelph, and the remainder grew on at the OAC. When Crow moved to Simcoe, he took bulbs from his friend's garden, raised them and released them under the name *L.×princeps*. From the same garden another lily grower, Robert Patterson, grew a third type which was also called 'George C. Creelman' — the finest and tallest of the hybrids. In 1927-28 the Canadian Horticultural Council attempted to resolve the dilemma by stating that the lily which was registered under the name 'George C. Creelman' by Robert Patterson should stand and any other original seedlings from this cross should be given other names.[49] A sister seedling from the first cross grown by H.L.Hutt had less massive flowers and was shorter in height, was named and released as 'Crow's Triumph' (the name suggested by Hutt after Crow's death in 1933) and was very popular with florists.[50]

However, this small tempest was overshadowed by World War I and its aftermath. Her hybridizing was carried out against the backdrop of the war, when Greater Production campaigns were directed toward homeowners as well as farmers to grow as many vegetables as possible for home and army consumption. Plant breeding projects obviously came to focus on creating vegetable strains which would be faster ripening, hardier and resistant to disease and insects. The lilies had to wait.

CONSOLIDATION OF CAREER — THE OTTAWA YEARS — 1920-1948

After World War I interest in ornamentals in private, academic, and government sectors was renewed. This revival was coupled with a call for new varieties, colours and forms to enhance our gardens. The long war period had, for the general public, probably stimulated a longing for beautiful flowers and gardens — symbols of peace and repose. One commentator noted, somewhat bombastically, that this demand for new and improved plants was "...perhaps more intense now than at any period in the history of floriculture."[51]

After the war, professional horticulturists, who had experienced great difficulty in obtaining plant material during the war, also called for more Canadian-grown and -originated material: "We have been too dependant upon Great Britain and the Continent for stock, and as a consequence perhaps 50% are not suitable for Canada."[52]

The Dominion Experimental Farms System was a leader in the resurgence of ornamentals research and breeding. In fact, beginning in the 1920s, intensive research, testing and hybridizing of ornamentals became one of the System's priorities. The centre of operations was in Ottawa.[53]

Here, the Division of Horticulture was led by William T. Macoun[54] who became in 1898 curator of the Arboretum and Botanic Garden at the Central Experimental Farm [hereafter: CEF]. By 1910, he was promoted to Dominion Horticulturist, overseeing the work of the horticultural departments in the System's twenty-four Farms and Stations. In addition to his administrative duties, he carried on extensive breeding programs with apples and potatoes.

Macoun was involved in most of the horticultural movements of his time, wrote and lectured extensively, was a member of a great number of horticultural organizations, and was a popular judge at horticultural competitions. He was characterized as a tireless worker for the betterment of gardening.[55]

After the war, Macoun responded to the need for an expanded range of ornamentals by searching for someone to undertake the experimental work. He felt much needed to be done in creating hardier ornamental shrubs and perennials. The previous Assistant had "...neither the eyesight, disposition or the ambition to do this work."[56] The successful applicant was Isabella Preston, now thirty-nine years old. The breakthrough of the Creelman Lily, as well as the solid work she had done under Crow's tutelage and her obvious talent for ornamental breeding, had brought her to Macoun's attention. Miss Preston described her transition from self-taught researcher to centre-stage hybridist quite simply-

> Dr. Macoun was looking for someone to do breeding work with ornamental plants so I applied for the position. I wanted to discontinue working with vegetables which I had to do during the war. Dr. Macoun gave me a list of plants and told me to see what I could do with them.[57]

This modest statement hides the fact that Macoun suggested she work on six different genera chosen to be less likely to duplicate the efforts of other plant breeders. The genera were: lily, rose, lilac, Siberian iris, columbine and flowering crabapple – quite a challenging range. Most breeders would specialize in one or perhaps two genera, since the work involved and the slow acquisition of information on timing, technique and cultivation could be enough for one person's lifetime. One of her main objectives (in accordance with CEF policy) was to breed material hardy enough to endure northern prairie winters, and ornamental enough to beautify farms, ranches, towns and cities.

Soon after Miss Preston was hired, Macoun went on his annual tour of prairie Stations and to meet nurserymen and plant breeders. Miss Preston had told him along what lines she planned to proceed. According to one source, Macoun informed horticulturists at the Brandon Station as well as Frank Skinner, a talented nurseryman/plant hybridist, about the work she was to undertake. Miss Preston was reported to be very angry.[58]

Miss Preston occupied a unique position in Ottawa. At the time that she entered the federal civil service in 1920, women were not favoured employees. They traditionally occupied the lower bureaucratic levels – clerks, stenographers, etc. Advancement was almost non-existent. If they married,

they were expected to resign. In general, women were not considered suitable for, or capable of, employment at higher, more responsible levels.[59] In fact, Miss Preston was doubly unique: she was participating in an, as yet, unrecognized profession as well as invading a male-dominated pursuit. Serious horticulturists were usually seen as men. Males held key positions in horticultural societies, and were major contributors in plant breeding circles and the nursery industry. The first woman president of the Horticultural Societies of Ontario Association, Mary Yates, was only elected in 1920; Mary Eliza Blacklock, one of our first nurserywomen, established Rowancroft Gardens in 1914. However, a woman commentator did note that there was a need for women in the scientific aspects of horticulture: plant hybridizing needed "...the neat fingers and patience of women, it calls for taste and perception of colours."[60]

The Department of Agriculture was not exceptional in its hiring policies toward women. Although Miss Preston made her appointment seem effortless, it was not. She actually began working at the CEF on May 1, 1920 as a day labourer at fifty cents an hour – one of the lowest grades in the Department. By November Macoun requested that the Director of the CEF, E.S. Archibald, create a new position in the Division of Horticulture – that of "Specialist in Ornamental Horticulture" – to be filled by Miss Preston. She was highly recommended for her "energetic" work in breeding and labelling ornamentals, her "...excellent training and an excellent record as a Hybridist at Guelph," and her ..."real love for the work," a "...qualification so very difficult to discover in Assistants."[61] But all this praise was qualified by the Director's admission to the Deputy Minister: "To be frank we have been on the lookout for trained men capable of filling these vacancies and carrying on the work as it should be done, and have failed to locate promising men who would consider coming at the minimum of the classification."[62] It was feared that the ones who would apply at this scale would be relatively untrained, and would leave for a better-paying job after a few years' training.

The Director did rewrite the educational qualifications to suit Miss Preston's unique background. Instead of the original stipulation for a university graduate in botany, this was reduced to education equivalent to a high school graduation with training in botany and four years experience in plant breeding at an agricultural college or experimental station. This was not unique, since many of the early Department of Agriculture officials were also self-taught enthusiasts. For example, William Saunders, the first director of the Experimental Farm System, was a druggist in London, Ontario, who rose to prominence through his experiments in fruit-raising on his own experimental grounds. W.T. Macoun rose through the ranks at the Farm – from day labourer to Dominion Horticulturist, responsible for the progress of Canadian horticulture. Miss Preston, like her superior, became a professional on the job rather than as part of an academic program of study.

The mills of the bureaucracy ground very slowly, for Miss Preston did not receive a permanent position until September 9, 1922 as "Specialist in Ornamental Horticulture." Although the duties remained the same (plant breeding, labelling the collection, writing for public information, record keeping and exhibition judging), the position was declassified from an Assistant's pay scale (beginning at $2400) to the new position of "Specialist" starting at $1400.[63]

However, Miss Preston had enthusiastically begun working on May 1, 1920. She set out into the CEF gardens that first summer, with her tweezers,

labels, and notebook and her favourite low stool upon which she sat to record meticulously the crosses made. She worked her way through the lily, rose crabapple, lilac and columbine collections, choosing seed parents and pollen parents; watching the pollen ripen until it was just right for fertilization, and then effecting the cross, painstakingly tying labels on each stem. Then she waited and watched, as seed pods matured, and then she collected the viable seed. It was an intense summer of enjoyable work for Miss Preston, as she laid a firm foundation for her subsequent efforts in Ottawa. In fact, many of her later originations were due to the work begun in 1920.

HORTICULTURAL INTERESTS

Lilac

One of Miss Preston's first programs involved the lilac – a plant so well-known to Canadians that many thought it was indigenous to Canada. However, the lilac was a hardy traveller, first entering Europe in 1562 from the Near East, hopping across the channel, establishing itself in England by 1692, and then coming to the New World in settlers' baggage.[64]

The lilac (or laylock as it was called in Upper Canada) was an established shrub in our early pioneer gardens.[65] Usually planted in the front garden or by the door-step, it was well-loved for its fragrance and early blooming. The earliest mention of it in Canadian commercial distribution in Upper Canada was in 1827 in William W. Custead's *Catalogue of Fruit & Ornamental Trees, Flowering Shrubs,: etc.*[66] By 1872, D.W. Beadle in his *Canadian Fruit, Flower, and Kitchen Gardener* could remark:

> These are well-known hardy shrubs, which grow well everywhere, in every soil, and all exposures. They have become so generally diffused that they are hardly held now in the estimation which they really deserve.[67]

However, the new lilac hybrids once again brought this shrub into the horticultural "spotlight." From the mid-1800s the French had led the field in hybrid introductions of the common lilac. Miss Preston's crosses made in 1920 put Canada on the lilac "map." Following Macoun's suggestion, she crossed *Syringa reflexa* (pendulous, compact, narrow pink flower clusters) with *S. villosa* (smaller, erect flower clusters) – both hardy in Ottawa – with the hope of creating a hardier, floriferous variety suited to prairie cultivation. She was so successful that nearly 300 seedlings resulted from the cross[68] – seedlings which did not bloom in full until 1924. In Miss Preston's words "There was great variation in the seedlings, but they were all very floriferous and distinct from either parent."[69] What she had succeeded in producing were very hardy, showy shrubs with semi-pendulous flowers in many shades of purplish pink. They were rapid growers and free from disease and insect pests, but unfortunately they were not fragrant. However, their floriferousness was very impressive ("...the size of the panicles and number of them made the bushes appear to be one mass of bloom."[70]), as well as their bloom time – a full two weeks later than the other varieties.[71] Vita Sackville-West, from her English view point, characterized the new hybrids as "exciting crosses," "strong growers" with flowers of "looser delicacy."[72]

In 1927, before any of the seedlings had been named or registered, Susan D. McKelvey (a noted lilac expert) heard of the new hybrids, and, wanting

to include them in her forthcoming monograph on lilacs, visited the Experimental Farm. Miss Preston later recalled that Mrs. McKelvey chose her favourite among the unnamed seedlings "from the botanist's point of view" and named it 'W.T. Macoun.' And then Miss Preston chose one of her own favourites, which was named 'Isabella' by Mrs. McKelvey. She also christened the new hybrid group: *Syringaxprestoniae* .[73] Later on, over fifty varieties were originated, using the names of Shakespeare's heroines: from Adriana to Portia to Volumnia. One nurseryman on seeing the wealth of Preston lilacs, merely noted that, "one dark one and one light lilac [is] all that would sell—people do not care a hoot about varieties."[74] They were registered and released for commercial distribution in the 1930s.

Evidently Frank Skinner made the same cross at the same time as Miss Preston (lending credence to the story of Macoun advertising her program). He felt disadvantaged for not only were these varieties not reliably hardy at his nursery in Dropmore, Manitoba, but he also had to send for pollen of *S. villosa* and *S. reflexa* from the Arnold Arboretum:

> This dry pollen was more difficult to work with than the fresh material, and it sometimes took several attempts before I was successful in securing hybrids. Miss Preston...was able to go to Boston for fresh pollen with the result that she succeeded in raising hybrids either two or three years before I did.[75]

This was not the only floral area in which they were rivals.

Rose

The rose —'queen of the flowers' — also occupied Miss Preston during her first season in Ottawa. Although roses were cultivated 3,000 years before Christ[76], they were grown in Canada only from the time of the French settlers.[77] But by 1872 D.W. Beadle could devote nineteen pages in his book to rose cultivation and a description of available varieties — most of which were not reliably hardy in the more northern areas.

Miss Preston was one in a handful of rose enthusiasts searching for winter-hardy roses. In 1926, J.W. Crow (happily hybridizing in Simcoe, Ontario) could still note that rose breeding offered a promising avenue of work. In that year he offered $1,000 for a new rose of Canadian origin, in order to "...stimulate interest in rose breeding and in order to bring home to rose lovers the commercial value of new originations..."[78] The winner could be a climber, a bush rose or a recurrent blooming bush rose, but it would be hardy, disease-free, and "meritorious in many aspects."

With her arrival at the CEF, the rose breeding program, which had ended with Dr. William Saunders' introduction of his hybrid rose 'Agnes' in 1897, commenced anew. She dreamed of producing a climber which could be "left over the arches and pergolas all the year, and in a few seasons over the supports with masses of bloom like they do in the Old Country."[79] Also on Miss Preston's wish-list were hybrid teas which would keep their colour during hot, dry Canadian summers. "Everyone," she once declared, "who has a garden wants roses in it and there is no reason why they should not have some."[80]

She began by crossing "Rosa species and so get new varieties of ornamental shrubs, rather than a rose bush such as one generally sees'[81] i.e., tender hybrid tea bushes originating in Europe. She first began crossing *Rosa*

rubrifolia and *Rosa rugosa*. The rugosas were especially prized by northern breeders for their hardiness and resistance to disease and insects. Although a large number of crosses were made, only a few set seed. Unfortunately, many of the seeds never germinated:[82] "A great deal of patience is required as so much work has to be done for very small results."[83]

In spite of these difficulties, she produced twenty-eight hybrids originated between 1928 and 1940. The hybrids ranged from single to double flowers, pink through dark purple hues, and bushes to climbers. The successful crosses were culled from disasters such as the cross which produced seedlings "so thorny that no one would want to grow them."[84] .

She had begun bravely in 1922, announcing: "A new rose cannot be made in a day, but we hope to live long enough to produce a rose as good in its place as Marquis Wheat and Melba Apples are in their[s]."[85] But, for some reason, the rose program did not seem to elicit as much enthusiasm and attention as her others, and in 1946, she sadly noted that her roses "have been rather neglected owing to war-time conditions."[86] Unlike her other plant originations, her roses never won awards.

Columbine

In 1920 she also began working with columbines. She used the early-flowering species, attempting to produce hybrids which would bloom three weeks earlier than existing varieties.[87] She crossed the hardy *Aquilegia canadensis* with *A. sibirica* — an early-blooming, blue-flowered species. When the seeds from a second generation of self- and open-fertilized seeds bloomed, a great range of colour from pinks through purples resulted.[88] Regretfully the entire line was discontinued because of lack of effective controls against the columbine borer.[89] This was the only program she attempted which resulted in a complete dead-end.

Siberian Iris

An early program which was quite successful was Miss Preston's work with *Iris sibirica*. In Europe or North America very little work had been done on this Central European native until the 1920s.[90] Because of its hardiness, ease of culture, and lack of insect troubles,Macoun thought it might be worth some work. As Miss Preston surveyed the possibilities in the Farm garden, her first thought on seeing 'Snow Queen' in bloom was "how much it would be improved if the stems were a foot taller, so that the flowers would show up better.[91] By 1924 she had ninety-two seedlings blooming from this cross — all in various shades of blue. Miss Preston noted in 1936 that the bed containing second-generation seedlings "was a fine sight as blue and white were mixed together."[92] The second generation was quite mixed not only in colour, but also in height. She never succeeded in creating a superb white Siberian: "As in all plant breeding work, there were disappointments. The tallest plant with white flowers was almost ugly as the petals were quite narrow."[93] Never a negativist, Miss Preston commented spiritedly: "...our wish for a tall white Siberian Iris has not yet been realized, it will come..."[94]

Between 1928 and 1936 she made twenty-three originations from this cross, naming them all after Canadian rivers. 'Ottawa' and 'Gatineau' won Awards of Merit from the Royal Horticultural Society, and today are still recognized as significant contributions to the species. In fact, 'Ottawa' was the first Canadian iris to win an international award.

Miss Preston and F. Cleveland Morgan, a Montreal garden enthusiast and iris breeder, were the only two hybridists breeding Siberian iris of quality in this period.[95] With typical British understatement, she summarized her efforts: "...I like to think that I helped a little to popularize the Siberian Irises."[96] Unfortunately, the breeding program was discontinued when World War II began, but even today iris breeders use her Siberians in their work, notably 'Gatineau.'

Crabapple

Her work with hybrid 'Rosybloom' crabapples was also initiated in 1920. Named by W.T. Macoun for a group of hybrids originated at the Central Experimental Farm before Miss Preston's tenure, she improved them significantly.[97] Few flowering trees and shrubs, let alone those with purple foliage, were hardy in Ottawa and northwards. Her goal was to create such a plant:

> There is a need for plants with coloured foliage to give variety in the shrubbery border, so hardiness and purple foliage and, of course, attractive flowers were the aims set for the project.[98]

The natural elements or the limitations of science often hamper the work of hybridizers. In this case, Miss Preston was up against the general public:

> ...Many cross pollinations were made by the writer in 1920 and a number of fruits set. Unfortunately, the trees used as parents were growing on lawns where they were easily seen by the public. The large maroon apples on the 'Niedzwetzkyana' tree proved too attractive to someone and all except four of the hand-pollinated fruits were stolen. At the top of the tree there were a few apples left so these were gathered and the seeds harvested. It is from these open-pollinated seeds that most of the varieties have been grown. It was evident when these seedlings grew and bore fruit that bees had cross-pollinated the flowers with pollen from a hybrid growing nearby.[99]

A group of highly ornamental trees resulted, bearing deep rose or pink, fairly fragrant flowers which did not fade as they grew older and bronze purplish leaves, and fruit that varied in taste, colour and size. Since the goal was toward small trees with ornamental flowers and foliage, it was a pleasant surprise when it was discovered that some of them had edible fruit, or fruit suitable for jam.[100] 'Scugog' in particular was noted for its fruit: "quite edible and when stewed or canned is really delicious. It also makes fair flavoured jelly of a beautiful ruby colour."[101] Her personal favourite was 'Cowichan' because of its annual profuse blooming, its fruit suitable for jelly, and its spectacular fall colours.[102]

Between 1928 and 1940, thirty-three hybrids named after Canadian lakes (e.g. Erie, Muskoka, Okanagan) were originated. "As you can well imagine," Miss Preston wrote in 1936, "it is a difficult problem for a plant breeder to decide which of his new plants is the best and whether it is worth naming or introducing...Mr. R. Warren Oliver [Assistant, Ornamental Horticulture Department] ..says that he has never seen such showy pink flowering crabapples anywhere else and he found it very difficult indeed to say which should be discarded."[103] 'Athabasca' and 'Simcoe' won Awards of Merit from the Royal Horticultural Society in 1936 and 1940. When released, the crabapples excited interest across the country. For example, when the influential editor of the *Country Guide,* G.F. Chipman, mentioned them in an article, all available scions

were immediately requested and dispersed to the west.[104] One prominent horticulturist later felt that it was too bad one of her introductions was not selected as a centennial tree.[105]

PROFESSIONAL DUTIES

Writings

The intensity with which Miss Preston laid the essential groundwork of her future plant work was typical of her subsequent summers in Ottawa, as her life adjusted to the rhythms of the gardening year. Winter was devoted to writing. During her 26 years at the CEF, Miss Preston wrote prodigiously.

Part of the writing workload was devoted to answering horticultural queries from the general public. She occasionally found this a considerable duty. On March 7, 1934, she recorded that: "Mr. Davis wanted Miss Wright to take dictation so my letters had to wait."[106] March 17th saw her dictating for three hours, and "still had others to do."[107] Six months later she simply notes: "Dictated 63 letters."[108]

Some of the sixty-three letters dictated that day might have been written to fellow enthusiasts. These could be long, detailed discussions on the specifics of crossing lilies. Or it could be a notice on plants which had proven hardy at Ottawa and was being tested in other parts of the country. Or she might simply detail the successes and failures of a certain line of inquiry. She corresponded with all the major breeders in Canada and Britain, and those in the U.S. who were interested in similar plants. She was unfailingly helpful and informative. One breeder, Percy Wright of Sutherland, Saskatchewan, went so far as to write: "You are one of my heroes, not only because you have been successful in a line which I should like to be successful in, but because of your long record of helpfulness and human sympathy."[109]

Later on in her career, Miss Preston's office mail expanded to include detailed letters about specific hybrids she originated, or questions on general culture. Another later preoccupation, especially in the 1950s, was with correspondence dealing with various horticultural committees, especialy in the years that Miss Preston and a handful of others were organizing the North American Lily Society.

When Miss Preston was not writing letters, she was churning out articles on a variety of horticultural topics. "How-to" articles would focus on the cultivation of a family of plants or particular varieties. Many of these articles were published in Canada's foremost horticultural magazine, *The Canadian Horticulturist,* later *Canadian Horticulture and Home Magazine.* Periodic announcements of new annuals, perennials or shrubs entering the market would also be written by her, and often published in *The Canadian Florist*. In magazines and annual reports such as *The Gardeners' Chronicle, American Rose Annual* or the British and American *Lily Yearbook*, Miss Preston would publish pieces detailing her new originations, or report on a particular line in her breeding programs. She also wrote, for others to deliver, a series of radio talks for CKCO, Ottawa's first private radio station.[110]

In addition to her two books on lilies published by Orange Judd Company in 1929 and 1947, Miss Preston authored major CEF booklets on roses, annuals

and perennials, and for the Division of Horticulture, a number of one to three page bulletins on a variety of plants, as well as unsigned press articles.

All her writing was characterized by clear, unadorned, workmanlike prose. No rhetorical flourishes or fancy metaphors cluttered the information she was so happy to impart. Her lily books were praised for their appreciation of the home gardener's need for understandable instructions and of the restrictions imposed upon them in the growing of lilies on city lots. These two books were the only ones ever written on lilies in Canada.

Occasionally the reader was allowed to glimpse a personality behind the writing. In *Lilies for Every Garden*, she unbends a bit to remark: "If one wants to grow lilies, and who does not" [p. 21] Or, she could write almost lyrically: "It is difficult to describe the beauty of the colour [*L. regale*] and paintings seldom do it justice. When looking at an open flower with the sun shining through[,] the rose color seems to give an opalescent sheen to the petals which is quite wonderful." [*Ibid*], p. 130] She occasionally exhibited in her writing her verbal forthrightness: "One frequently sees a gardener dividing a root simply by cutting it with a spade. This is a heartless way to treat a treasured plant."[111]

There was a controlled zest about her writings, which seemed to be the same when one spoke with her. A.R. Buckley reminisced that "she could talk your arm off on certain subjects"[112] — mainly horticultural. Discussion with fellow enthusiasts often sounded as if they were all conducted in Latin as the horticulturists animatedly discussed lilies and other flowers.[113] In fact, Miss Preston could be quite definite ("a stickler for detail") about Latin usage. She even corrected D.F. Cameron when they worked together in the late 1940s. She said, "You know, Mr. Cameron, that should be ending in "um" because it's neuter.' "[114] She much preferred using the correct Latin plant names, but often used the common English name in her popular writings. However, she was not above a bit of proselytizing. In recommending the book *Annuals* by the British author Roy Hay she noted: "The translations and explanations of the botanical names will help the reader to realize that these difficult names mean something and so will be more easily memorized."[115]

She could be quite assertive in her opinions ranging from the proper manner of staking delphiniums to advice on childraising and tea making — often voiced in a soft tone, but with a definite emphasis.[116] At the same time she was quite a shy, reticent woman. She had an absolute terror of giving public speeches. At the height of her fame, she was asked by the North American Lily Society to speak at an annual meeting. She told her niece: "Good gracious, I couldn't possibly do that, you know. I should die of fright."[117] When Miss Preston was awarded Ontario's prestigious Carter Medal in 1937, her acceptance speech was: "It's a great honour to receive this beautiful medal and I wish to express my thanks and deep appreciation."[118]

Beatrice Palmer

Miss Preston also encouraged neophyte garden professionals. For example, in the early 1920s she befriended a young woman, Beatrice Palmer, who worked at the CEF for a summer. Miss Palmer came from a horticultural family. Her father, R.M. Palmer, who had served as the British Columbia Minister of Agriculture in 1908-09, as well as in various agricultural and horticultural postings, began a commercial bulb growing business at Cowichan Bay, Vancouver

Island.[119] Two brothers (E. Frank, one of her fellow classmates at the OAC, and Richard C.) were leading horticulturists in Ontario and British Columbia. During the summer that Beatrice worked with Miss Preston, she absorbed Miss Preston's love for lilies. They were further drawn together when Bea left the CEF to work for J.W. Crow for two years at his Simcoe nursery and also to help co-edit the *Canadian Gladiolus Society Newsletter.*[120] A fast friendship developed and was sustained by a forty-five year correspondence punctuated by an occasional visit.

When Miss Palmer returned to Cowichan Bay, she helped run the family bulb business which was expanding by 1933 to include shrubs and perennials. She was instrumental in committing a portion of the business to lilies. Not surprisingly, her letters to Miss Preston were full of lily details:

> You may gather that I am rapidly becoming a lily fiend. I am doing all sorts of cross pollenizing and begged anthers of various things from Mr. Taylor when I was there. Perhaps I should concentrate more on increasing stocks of lilies I have but I can't resist the lure of hybridizing.[121]

Public Relations

Much happier imparting her horticultural knowledge to individuals and informal groups, Miss Preston seemed quite at home leading tours through the CEF's ornamental gardens, answering questions and pointing out things of interest. She took notables (Lady Byng, Princess Alice), enthusiasts (lily growers, nurserymen), and groups of one sort or another around the gardens. She was rather miffed with one encounter: "Scotch school girls came...The Canadian lady in charge talked all the time & made it impossible to give any useful information to the other members of the party."[122]

Gardening

She had a vested interest in seeing that visitors enjoyed their tour and learned something from it, for it was also her responsibility to see that the gardens were properly maintained and all the plants correctly labelled. Until she was hired, the collection had come under criticism for faulty labelling. Her appointment, Macoun noted, "would place the Horticulture Division above criticism"[123] Garden inspections were obviously an enjoyable task. One can sense her enthusiasm when she talks about the perennial border:

> There are fascinations about a perennial border that are not found in other forms of gardening, and the chief of these is watching for and greeting with delight last years' treasures as they spring up one by one after the snow and frost are gone.[124]

It was important not only for testing new plants, but also for the breeding program, that as many varieties as possible were grown in the CEF's extensive ornamental and testing grounds, which were designed for demonstration and testing purposes as well as ornamentation. Miss Preston, on her frequent garden inspections, always found something of interest. She particularly enjoyed observing whether snowdrops or *Bulbocodium vernum* would bloom first each year.[125] As the season advanced, Miss Preston would be rewarded by the sight of her Rosybloom crabapples blooming in double rows near one of the CEF's entrance roads. Tulips, dwarf iris, daffodils and primroses would decorate the many ornamental beds. Later strolling along the "lilac walks" she would check

to see if the iris bordering these shrubs were also blooming - "Together they make a picture that can never be forgotten by a flower lover."[126] But she did comment that unfortunately the iris were grown in "alphabetical order and no attempt at colour harmony is possible...much of the delicate coloring is lost by having unsuitable neighbours."[127]

The rock garden was also somewhat of a disappointment, even though a large variety of plants was grown there. It was a place where dwarf plants were grown – not true alpines – and thus worthy, to her English mind, only of the "courtesy title" of rock garden: "A sunken path was dug out and beds about three feet high made on each side of it with rocks of various sizes half buried in the soil. No attempt was made to arrange pockets of various types of soil for special plants."[128]

Midsummer found her revelling in the beauties of the mixed perennial borders and the rose gardens. In 1926, a new rose garden was constructed which when in bloom, Miss Preston found "very attractive." By 1944 there were three distinct rose gardens – each displaying separate rose collections. Miss Preston admitted that she often felt "some anxiety" on how they would fare through the long Ottawa winters.[129] Number One rose garden seemed to be a favourite. The centre of the garden was ornamented by climbing roses trained to form pillars. Behind boundary beds of polyantha pompom roses were six rows of white trumpet lilies.

The perennial gardens were a source of delight as she watched the numerous varieties develop. She also enjoyed seeing her own introductions in the mixed border. She grew everything from delphiniums to perennial asters – she said she never found the individual aster flower particularly attractive, noting that asters were only striking when grown in mass. Her favourites, of course, were the lilies. She enjoyed mixing them against a "background of dark green shrubs, with campanulas, heliopsis, shasta daisies."[130] However, the white tubular lilies were often attacked by Baltimore orioles. The birds perforated the buds before they opened, often causing the buds to drop off or completely disfigure the subsequent open flower. So Miss Preston set up an ambush: "Dr. MacArthur & I came up about 8:30 & stayed until dark. We sat under the apple trees & watched but no birds came near the lilies..."[131] The next morning two labourers reported seeing the birds attacking the flowers. Finally wires were strung above the beds to discourage them, but in Miss Preston's mind, the orioles remained a serious problem.[132]

She also seemed to have particular charge of the Macoun Memorial Garden – a combination of perennials, lily pond, and memorial to her late supervisor. The gardens (designed by R. Warren Oliver of the Division of Horticulture) were located on the vacant ground which remained after Macoun's house was demolished, including the grounds surrounding the house, and the perennial border which was his "personal care and pride." Undoubtedly Miss Preston had a considerable say regarding the plant material. The garden contained many of his favourite flowers as well as many of the "lilacs, roses, ornamental crabapples and lilies originated at the Central Experimental Farm during his lifetime."[133]

She was also included in other plant projects. In 1929 for example, she was involved in varying degrees in the testing of annuals, such as sweet peas, perennials (asters, peonies), trees (evergreens, ornamentals), and shrubs (roses, mock orange).

Miss Preston was quite protective of all her gardens. In the late 1930s or early 1940s, she happened to be wandering through the gardens one afternoon when she spied a man picking flowers for a bouquet. He supposedly was Jean Francois Pouliot, a liberal member of parliament, whose family was prominent in the political life of Canada.[134] When she ordered him to stop, he merely said, "Do you know who I am?" Allegedly she replied tartly, "I don't care if you are the King of England, you are not to pick my flowers."[135]

Judging & Advising

Assertive, likeable, fair and truthful – these qualities characterized Miss Preston. She was often in demand as a flower show judge – a situation which would draw on these traits. Many CEF officials travelled to the multitude of horticultural exhibitions and flower competitions to judge entries. However, she was not, in contrast to her supervisors, deeply involved in horticultural organizations. The members of the Division of Horticulture, as well as the Director of the Farm took leading positions on committees (public planting, lectures and excursions, etc.) within the Ottawa Horticultural Society from the late 1920s up into the 1940s. She did belong to the Society, and did judge, but she evidently drew the line there. Or perhaps she did not want to be relegated to the Ladies' Committee or to be in the horticultural "spotlight." However, from the late 1920s until the early 1930s, she was secretary of the Ontario Horticultral Societies Association's Committee on Names and Varieties. The purpose of this committee was to bring new, noteworthy, or less-well known varieties to the attention of the Association. In 1937 Miss Preston was asked to join the Canadian Horticultural Council's Subcommittee of its Ornamental Gardens Committee.

Usually the fact of her sex did not enter her professional life. But once one of her trips became a bit farcical because of it. The Trappist monks at Oka, Quebec, needed some horticultural advice for which they requested a visit from a CEF horticulturist. Miss Preston was sent. When she stepped off the Oka ferry, the monks meeting her were horrified, for the monastery was off-limits to women. It never occurred to them that this expert would be a woman. But rather than embarrass her, they walked her around the outside of the monastery, asking inconsequential questions about some plants on the boundaries, and then sent her back across the Ottawa river on the ferry.[136]

A more successful excursion occurred in 1922 when she advised the Prime Minister (W.L. Mackenzie King) on a landscape design for his summer property on Kingsmere Lake in the Gatineau Hills north of Ottawa. King was not averse in accepting help from government departments in beautifying his expanding country estate. He appealed to W.T. Macoun for someone from the Farm to "look over my Kingsmere property with a view of making suggestions for its beautification."[137] Dutifully Miss Preston and T.F. Ritchie (head of the Vegetable Gardening section) went out to Kingsmere for the day and drew a rough plan with a list of shrubs and trees for planting. Establishing plants around the cottages was a challenge. Shade, poor soil, bad drainage and a short growing season conspired against creating lush flower gardens. However, Miss Preston advised that flowering shrubs (lilac, *Rosa rugosa*, honeysuckle, viburnum) be planted in the few open glades, after a liberal dressing of leaf mold and manure; annuals, perennials and climbers be planted around the two cottages; bulbs be naturalized under the deciduous trees: "Very beautiful effects could be had in spring;" and plantings of willow and iris to be established on his lakefront land.[138] King said he was delighted with the concept, but in the end had CEF

employees plant only flowering shrubs along the serpentine road leading through his property.

She also gave advice to aid in the war effort during the Second World War. In 1942 she was given a unique assignment: to devise for the Royal Canadian Air Force a list of plants suitable for camouflaging aircraft hangers.[139]

Travels

Miss Preston always tried to visit other hybridists wherever her travels took her. One such trip occurred in July 1932 in Ontario, when Miss Preston toured the Guelph/Simcoe area. Her first major stop was the OAC – perhaps to judge the competition. Her critical faculties were certainly in force as she was conducted through the new Horticultural Building and the greenhouses: "Splendid cyclamen...Mums fair, hanging begonias good, rose fair."[140] Gardens in nearby Dundas and Gage Park, Hamilton, offered splendid sights. The next day found her in the Vineland Experimental Station escorted by the Superintendent, Dr. E.F. Palmer, Bea Palmer's brother. She was quite taken with his lilies – his *Lilium×princeps* seedlings she found "marvellous – one had 37 blooms." If this day of lily gazing was not enough, Dr. Palmer and she drove to Simcoe to visit J.W. Crow. More lilies were admired, and "snaps" were taken in his garden.[141] This was probably the last time Miss Preston was to see Crow. The next year was a tragic one for Miss Preston – in a short time Crow and Macoun died. Also, H.H. Groff, who often exchanged plants with Miss Preston passed away in that year.

Closer to home, in 1934 she visited A.E. Challis, head gardener at Rideau Hall. He had perfected a pure white amaryllis – a colour rare in that species at that time. He named it 'Stanstead' after the country home of the Earl of Bessborough – the current Governor-General.[142] Miss Preston was interested to learn that Mr. Challis had worked with white amaryllis with red lines on the flowers – these lines were eradicated by years of breeding and culture: "The one I saw was very fine indeed."[143]

She also attended the annual Ontario Horticultural Societies Association meeting – usually held in Toronto. This gathering generally featured the who's who of Ontario horticulture. This association was not only responsible for furthering the popularity of gardening through information to its members, but also for sponsoring a number of urban and rural beautification projects. Propelled at times by an almost crusading zeal, members of the Association decorated railway stations, main streets and provincial highways with floral landscaping. While Miss Preston never spoke at any of these meetings, she did answer questions from the audience on the cultivation of various plants. On one occasion she confessed in her Work Diary that she did not make herself heard very well [Feb. 18, 1938].

PERSONAL LIFE

In addition to her work-related activities, Miss Preston led a rich personal life. She had a circle of friends, many of whom were professional women, such as Anita Bailey Small, a health care worker and enthusiastic gardener, and Jean Austin, teacher at Elmwood, a private girls' school. The CEF also provided a number of friends who were inclined to horticulture. Miss Preston often spent the weekend with the J.A. Ruddicks at their summer cottage in the Gatineau

Hills — a favourite Ottawa resort area. The Ruddicks (he was the well-known Cold Storage and Dairy Commissioner for Canada) had bought their summer home, Laurentian Lodge, in 1915. From the first, Mrs. Ruddick had determined to grow flowers on this rocky, forbidding site. In twelve years she transformed a huge glacial rock area into a celebrated rock garden. She combined a great variety of alpines, forest dwellers and common perennial and annual flowers into a garden of great beauty and originality. Mrs. Ruddick even had one section devoted to clippings given her by Lady Byng from the Rideau Hall rock garden. One can imagine Miss Preston aiding and supporting Mrs. Ruddick's forthright gardening philosophy: "Use every bit of rock—Don't be afraid of it. Plant between, atop or along side. Presently, you will be convinced that flowers need near them the harsh stability of stone."[144]

Miss Preston also remained close to her sister Margaret. When they were not writing (every two days), they visited. Isabella would spend Christmas in South Carolina and Margaret would visit every March through June in Ottawa. Miss Preston's nieces remember the excitement of awaiting her arrival for the holidays. When Margaret died, her daughter, Margaret Burtner, carried on the tradition.[145]

Her strong family ties and fierce national identity also drew her back to England for visits, although infrequently. One trip was clearly a busman's holiday. In 1931 she toured many famous English nurseries, gardens and flower shows — meticulously noting new or unfamiliar plants and cultivating tips: "Wisley June 6th: Went round Iris for test — noted the following as good."[146] At the Royal Botanic Garden, Edinburgh, she learned a new method of propagating *Syringa*: "I am anxious to try it here."[147] On that trip she met breeders, nurserymen and enthusiasts — including the famous plantsman E.A. Bowles. She was not adverse to airing her opinions when visiting noted gardens and gardeners. She records on a visit to Mr. Page's gardens at Hayward Heath that: "Shrub roses were planted too near together I thought and said so."[148]

She also met Lady Byng at the Chelsea Flower Show. Lady Byng (wife of the Canadian Governor-General from 1921 to 1926) was an ardent horticulturist and plant collector and frequent visitor to the Experimental Farm — where she probably met Miss Preston. Whenever she was on tour in Canada, Lady Byng alloted time for collecting plants and seeds along the way. These plants were transferred eventually to her Essex estate, Thorpe Hall. Her gardening legacy to Canada was the rock garden built at Rideau Hall (home of the Governors-General). By the example of her rock garden "my neighbours would realize that they could get more amusement out of something of that kind than out of sweating over the mowing of a small grass plot all summer though."[149] However, it also had to do with her need to garden: "Whenever my foot found even a temporary resting-place," she noted, "there I started a garden of some kind."[150] She also involved herself in 'city beautiful' projects in Ottawa, as well as in the local horticultural society.

During her 1931 English tour, Miss Preston had won an Award of Merit from the Royal Horticultural Society for a lily variety (resulting from an early cross between *Lilium davidii* and *L. willmottiae* named 'Lady Byng'[151]) When they met in England that year, Lady Byng expressed regret that the lily had not won an award at the Chelsea Show. She then said if "hers were strong she would cut the stem & show it at a later show."[152] The ties between the two women continued up into the 1940s. She grew Miss Preston's lilies and sent special Siberian iris from her English collection to the CEF for breeding purposes.

They met at least once during her wartime stay in Ottawa. And when she returned to England, Lady Byng was laden with Miss Preston's newest lily hybrids. These lilies not only ensured Miss Preston's international reputation but also guaranteed her a place in the history of horticulture.

LILY

Lilies were not forgotten amid the pressures of her office work, or the competition of her other breeding programs. Admittedly her favourite flowers, lilies, received much of her attention during her years at the CEF. As with the course of most hybridizing, her new lily hybrids were not an overnight success. Between 1920 and 1932 Miss Preston effected 222 different lily crosses which resulted in nearly 1,000 seedlings. But only 313 seedlings were successfully raised versus 608 failures.[153] This was usually only the beginning. Large numbers of seedlings of each cross were then nurtured and grown into blooming plants. Miss Preston observed: "This is always a serious problem to the hybridist and much time and space are required for this branch of the work."[154] Out of hundreds of seedlings only the best would be registered after years of testing. This was the course followed for the lily seedlings produced from the cross made in 1929. The original cross involved. *L. davidii* 'Willmottiae' (in the Turkscap group) and a seedling raised at Ottawa of *L. dauricum* (an Umbellatum-type). This was considered a very wide gap to bridge, which many breeders would have said could not be done.

The resulting forty seedlings varied in colour in the orangy-red spectrum. The ones which displayed deep red tones were especially prized, as this was not a common colour for lilies at the time. The tendency of their flowers to face outwards was also highly prized.

Between 1934 and 1939, seven of the original forty seedlings were named and introduced. The hybrids were named after seven stenographers who worked for the Division of Horticulture, and thus became known as the "Stenographer Lilies." Evidently one of the stenographers was not thrilled by the honour. As related rather dramatically in a *Canadian Homes and Gardens* article, Miss Preston one day took Phyllis Cox out to see her namesake, a brilliant orange-red plant and her personal favourite. "There," said Miss Preston, "that's you." "What, that hideous orange thing!" gasped Miss Cox.[155] However, this was not the reaction of the lily world. The lilies were praised for their resistance to disease, adaptability to ordinary garden soils, hardiness, floriferousness, ease of propagation, and beauty. For many years after, they were used by lily breeders as breeding material for improved strains of lilies.[156] Miss Preston was particularly happy with the interest the lilies aroused in lily growers around the world, and was very gratified "to know that they do well in the colder sections of Canada where few lilies had been grown before."[157] This, in fact, granted one of her wishes made in 1933 – for lilies hardy in the prairies. However, her other "dream" was not accomplished in her lifetime: for miniature lilies suitable for the rock garden.[158]

From this group came further notable lilies – products of crossing within the Stenographers and with other lilies. One of the most welcomed was 'Coronation' with drooping light yellow flowers. 'Coronation', introduced in 1937, was described by one breeder as "the crown of all Miss Preston's work with the hardy lilies."[159] "I shall never forget the excitement of the student who

was helping me, or the thrill that I felt when we found the seedling we had been watching so carefully was open, and yellow as we had hoped it would be," Miss Preston noted "A pale yellow Lily that is hardy and easy to grow has long been needed in the border for flowering in July. Most of the yellow-flowering species are difficult to grow in Canada, or else they bleach very badly in our hot sun."[160]

Another group which originated from crosses within and outside the Stenographer group was the so-called Fighter Aircraft Series – all six were originated or introduced during or right after the Second World War. They varied greatly in flower type and colour, ranging in the oranges and reds. 'Hurricane', 'Spitfire', and 'Corsair' all had reddish flowers which faced upwards. 'Mosquito' had smaller, stiffer horizontal flowers of a soft shade of orange.[161] Percy Wright noted that crossing the reflexed drooping lilies and upright facing lilies resulted not only "in the acquisition of valuable intermediates but has resulted in the improvement of each type."[162]

She kept detailed notes on reactions of growers in Canada, England and the United States to these new hybrids: "1946 Aug. 17. Letter from Walter Bentley, Quarry Wood, Burghclere, Newberry, England, says, 'Lady Laurence put up a lily of yours, 'Hurricane,' but I cannot help thinking 'Coronation' is the best of them all, a really great lily would there were more like it."[163]

Lilies were naturally featured at the CEF. Clumps of her own originations were grown in the garden of the Macoun Memorial: "So that visitors can see how they like them in a mixed flower border."[164] A mixture of species were grown on their own in the ornamental grounds in one long bed with a cedar hedge for a backdrop. And in 1942 a bed was prepared in the CEF's gardens to hold only Miss Preston's hybrids. July and August at the CEF were lily months, when it became "the Mecca for the lily folk of the world."[165]

By the late 1940s, Miss Preston was becoming better known outside of horticultural circles, as *Chatelaine, Canadian Horticulture and Home Magazine, Canadian Homes and Gardens*, and various newspapers ran profiles of her. Even Vita Sackville-West, who had never met Miss Preston, added to her reputation: "I picture Miss Preston to myself as a lady in a big straw hat, going round with a packet of labels, a notebook, and a rabbit's tail tied to a bamboo stick."[166]

Awards were given by her peers, and places of honour were reserved for her at head tables at horticultural conferences. Her hybrids not only collected award honours, but also honours as breeding material. More and more hybridists used and publicized their use of Preston originations in their breeding programs. Miss Preston was averse to personal publicity (although very proud of her achievements), realizing the negative aspects of fame. Once, while attending the Philadelphia Flower Show with her niece, she quickly advised her: "Don't say a word to anyone who I am or they'll all flock around me."[167]

Among her peers she was known and respected for her breeding work. But there was also criticism over the years. Some felt she named too many of her cultivars, especially her lilacs: "The differences were so minute, you have to look at the label...She took some very good names that could have been used by other plant breeders...Some say she killed the goose that laid the golden egg by running out of names."[168] In later years she admitted that she probably kept too many selections. But Miss Preston noted when Lady Byng came to the CEF to look at the new lily hybrids, Lady Byng remarked that perhaps too many had

been named, but that even she "could not decide which she would discard."[169] The criticism was slight and did not endure.

The lilies were her last great contribution to Canadian horticulture. Much of her work had been stymied by the war and the reduced labour pool. By the time that life and horticulture were returning to normal, it was 1946 and Miss Preston was sixty-five.

GEORGETOWN – THE FINAL YEARS – 1946 - 1965

On December 1, 1946, Miss Preston attended several "social events held in her honour," was presented with a purse containing a money-filled wallet, and then closed her office for the final time. She left for England on the "Queen Elizabeth" the next month. Miss Preston remained there for a year to see if she wanted to settle there. However, she discovered after living in Canada for thirty-five years that she could no longer tolerate the English climate.[170] Her unease was aggravated by fuel and food shortages in post-war Britain. She returned to live in Georgetown, Ontario. The advantages were many. Her good friends from the OAC, the Hutts, were living there, as well as Sandy Best, a well-known lily enthusiast and breeder. She was also still in the eastern part of the country and therefore could easily travel to her American relatives for the holidays. Georgetown offered not only a quiet, small-town atmosphere, it also was two climate zones down from Ottawa. She could grow a wider range of material which must have weighed in the town's favour.

She bought a small wooden house embellished with typical Victorian gingerbread decorations. The interior was snug and comfortable. Her living room was ornamented with pictures of the English north-country, flowers, figurines, an old-fashioned sampler and shelves crammed with books.[171]

Miss Preston was a prodigious reader. Her shelves were filled not only with well-loved classics: Thackeray, Chaucer, Jane Austen, Dickens and Shakespeare, but also with horticultural literature. Her collection ranged widely from lilies to plant hunters' adventures; from the flora of China to Canadian wildflowers and from E.A. Bowles to Beverley Nichols.[172] Her books were personalized with a handsome bookplate, not surprisingly decorated with roses and lilies. She enjoyed reading well-written garden books: "Any book by Farrer is a delight, because of his style of writing."[173] Books by botanical explorers "who gave fascinating accounts of their trips" and by garden lovers who write "about the delights and trials they have encountered," she noted in her typically understated manner, "add to the interest of a garden library."[174] (After her death, one hundred and thirty-nine gardening books of hers were donated to the library of the Royal Botanical Gardens in Hamilton, Ontario.)

She did not spend her remaining years only reading. Her house was sited on a large lot, offering scope for experimentation and gardening – all to herself, and not subject to bureaucratic restrictions. She had once written to Frank Skinner in 1922 that she "had a great desire to have a garden of lilies of my own,"[175] She most likely included her favourite lilies mentioned in a 1959 article: 'Phillis Cox' – her favourite Stenographer lily, also *L. martagon album* 'Hurricane, 'George C. Creelman,' and *L. henryi* 'Citrinum'.

However she did organize her garden almost as a miniature Division of Horticulture grounds – she had her ornamental grounds and her experimental

grounds. Miss Preston devoted a large space on the east side of her house to her lilies and iris ("Iris have always been one of my favourite flowers and they have a prominent place in my garden")[176], and the seedlings of crosses she continued to make. All plants in this section were neatly labelled, and grown in straight rows.[177] The work habits of a lifetime were not easily discarded. She kept detailed records of her experimental plots – just as she did at the CEF. In her notebook "Seed Beds 1950" she recorded in which plot and row individual plants were grown, where and when transplanted, and their performance. She never stopped experimenting and crossing plants. She once gave a geranium hybrid (pink-flowered with a serrated edge) she had experimented with to her neighbour, saying: "You can put it on the market. I'm too old." [178]

She also grew flowering crabapples, roses, vegetables and fruit, and was especially proud of a row of Mr. Hutt's famous hybrid raspberries. When in fruit, these bushes were carefully covered by yards of old lace curtains. Her niece thought this looked strange indeed.[179]

The west side of the house was given over to ornamental garden beds where she grew perennials (one of her favourites was a clump of Devon cowslips she had brought over from England), annuals and Preston lilacs. She remarked that she had never met anyone who did not like lilacs until she moved to Georgetown. When she was planting a few of her hybrids, a watchful neighbour announced: "I hate lilacs, I always tear them up." Miss Preston, true to form, instantly retorted: "You wait until you see mine."[180]

She charted her garden methodically to ensure continuous bloom and pleasing colour combinations. A small lawn area set off the perennial borders. Here nieces, grandnephews, and neighbours were entertained to afternoon tea under a huge apple tree. One neighbour, a lily enthusiast, fondly remembered participating in her "garden tours" – discussing what was doing well, and what was not, and then going into the house to discuss lilies for hours. He said he never saw her without a hat or gloves. Her slight stoop he attributed to "bending over and looking at lilies."[181]

Although she was retired, she still maintained ties with the Division of Horticulture up into the 1950s. The summers of 1947 and 1948 found Miss Preston in Ottawa for short visits, helping the Ornamentals staff with breeding work – they had not found a replacement for her – suggesting selections, what lines to work along and crosses to make.[182] For the next few years after that, the staff sent letters letting her know what was happening to her plants or asking how to proceed. Her former supervisor, R.W. Oliver, wrote in 1947 after an enthusiastic description of her lilies flowering at the CEF that year:

> I could go on at some length like this which will no doubt make you laugh heartily because it looks as if I would end up by naming at least six or eight more. In spite of all the years I have spent grousing about the number of lily varieties and those of other plants really this last week has given me much more interest in lilies that I have been able to work up in all the years I have been here when I left all the work to you.[183]

They must have had a lively relationship. Oliver teased her about a photo of herself which had just appeared in the farm magazine *Family Herald and Weekly Star*: "I think, however, that you would be quite justified in suing the paper for publishing the picture, which I though made you much more belligerent than usual."[184]

She also continued to be quite active in lily groups, such as the North American Lily Society she helped found. In the 1940s and 1950s, Miss Preston took a leading part in organizing meetings, setting standards for awards. In 1950 she edited the *Yearbook:*

> Only a large membership can make it possible to do all the things that could be done to establish the lily in the hearts of the people so that it would rival the rose in popularity...In the meantime let us grow as many lilies as we can and invite the neighbours to come to see them so that they will be anxious to grow them in their own garden.[185]

Her life in Georgetown was quiet, given to her garden, visits from relatives and friends, occasional trips to nearby horticultural conferences, and the reaping of rewards. In 1950 at the age of sixty-nine, she received the prestigious Lyttel Cup from the Royal Horticultural Society for "good work in connection with the genus *Lilium*." The chairman sent along this note: "I can assure you that your hybrids have been more often referred to in laudatory terms at Lily Group meetings during the past 15 years than those of any other breeder." She commented rather uncharacteristically, that "I felt like standing on my head!"[186] She, however, refused to have the one meter tall, solid silver cup sent to her in Canada for fear of theft, and had a photo of it framed and hung in her front room.[187] She was not 'awards-proud' and often forgot where they were when curious visitors asked to see them.

In 1956 an enduring honour was awarded to her. Friends and colleagues established within the North American Lily Society the "Isabella Preston Trophy" in recognition of her work in the improvement of lilies. The sterling silver cup embellished with three-dimensional lilies clustering around the base continues to be awarded to the best stalk in the show.

This trophy can still be won, her medals can be touched, and her award citations can be read in pre-World War II horticultural journals, but unfortunately many of her originations live on only in photo collections, bloodlines of contemporary hybrids, and in dying memory. Plant breeding is an ephemeral art. A selected few of her crabapples still bloom at the Experimental Farm. A couple of her Siberian Iris continue to be sold by nurserymen. Her lilacs survive in home gardens and the catalogues of a few nurseries. But her "crown", her lilies, have nearly disappeared from private gardens and commercial distribution. However, her legacy to the lily world does live on, and not only as echoes within new hybrids. She pushed the horticultural frontiers forward stimulating later breeders to venture even further into the unknown to create new, improved varieties with different colours, forms, heights and stronger resistance to disease and pests. Certainly our gardens were enriched by her talent, determination and courage to persevere.

Her courage also helped her to surmount the normal crises of life, and to forge a new life and distinguished career in an adopted country. At her death she was characterized as "the dean of hybridists" and "the Grand Lady of Canadian Horticulture," but Miss Preston's niece saw another side: "She was a grand old girl, she had a lot of spunk, a lot of character, I guess that is what it is, in her face, in her body, in her bearing, there was character..."[189]

the end

Isabella Preston as a little girl. (RBG I. Preston Coll.)

The Preston family in Lancaster, England; ca. 1894.
(RBG I. Preston Coll.)

Isabella Preston, ca 1900. (RBG I. Preston Coll.)

Miss Preston in work clothes in the O.A.C. Garden, Guelph, Ont. 1918. (RBG I. Preston Coll.)

...1909...

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Henry H. Groff (1853-1933); one of our earliest and foremost professional plant breeders. (RBG Coll.)

Prof. James W. Crow (1861-1933); Miss Preston's mentor at the Ontario Agricultural College, Guelph, Ont. (RBG Coll.)

William Terril Macoun (1869-1933). Canada's first Dominion horticulturist (National Archives of Canada).

Frank Leith Skinner (1882-1967); a rival plant breeder, who specialized in producing hardy plants for the northern prairies; owner of Dropmore Hardy Plant Nurseries, Manitoba. (Manitoba Archives).

Macoun Memorial Garden, Central Experimental Farm, Ottawa. ca. 1936. In the centre the sundial memorial erected to the memory of W.T. Saunders. (RBG I. Preston Coll.).

Iris walk at the Central Experimental Farm, Ottawa, ca 1929. (RBG I.Preston Coll.)

Lilium x *princeps* 'George C. Creelman' at the Ontario Agricultural College, Guelph. (RBG I Preston Coll.)

Isabella Preston with *Rosa rubrosa* at the Central Experimental Farm, Ottawa, ca. 1927. (RBG I. Preston Coll.)

Veitch Memorial Medal awarded to Miss Preston "for raising good garden plants, December 1938" by the Royal Horticultural Society. (RBG I. Preston Coll.)

Close-up of *Lilium* x *princeps* 'George C. Creelman' (RBG I. Preston Coll.)

Isabella Preston with Mr. Slate's 'Yellow Elegance', July 1951. (RBG I. Preston Coll.)

The Isabella Preston trophy of the North American Lily Society, established in 1956 by friends of Miss Preston. It is awarded annually for the "Best stalk in the show". (RBG Library).

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Bookplate of Isabella Preston. (RBG Coll.)

APPENDIX A

AWARDS AND HONOURS GIVEN TO MISS PRESTON

1931. Wm. N. Craig Gold Medal, Massachusetts Horticultural Society, for experimental work with lilies.
1935. Elected Honorary Life Member of the Pennsylvania Horticultural Society.
1937. Carter Medal, Ontario Horticultural Association, for horticultural achievement.
1938. Veitch Memorial Medal, Royal Horticultural Society, for work in raising good plants.
The Macoun Memorial Diploma, Canadian Horticultural Council, for outstanding achievement in originating ornamental plants.
1947. The Jackson Dawson Medal, Massachusetts Horticultural Society, for "skill in hybridizing and propagation of plants."
1950. Lyttel Cup, Lily Committee of the Royal Horticultural Society.
1954. Medal, American Iris Society, for "achievements in hybridization."
1956. The 1956 *Lily Year Book* was dedicated to her.
The Isabella Preston Trophy established, North American Lily Society, "in recognition of her work in the improvement of lilies."
1961. E.H. Wilson Memorial Award, North American Lily Society.

Life memberships were also given to her in the Canadian Iris Society and the Massachusetts Horticultural Society.

AWARDS GIVEN TO PLANTS ORIGINATED BY MISS PRESTON

1928. *Iris sibirica* 'Ottawa', Award of Merit, Royal Horticultural Society.
1931. *Lilium* x *davmottiae* 'Lady Byng', Award of Merit, Royal Horticultural Society.
1933. *Iris sibirica* 'Gatineau', Honourable Mention, American Iris Society.
1934. *Lilium* 'George C. Creelman', Award of Merit, Royal Horticultural Society.
1935. *Lilium* 'Grace Marshall,' Award of Merit, Royal Horticultural Society, Banksian Medal, Royal Horticultural Society, for best hybrid lily in 1935.
1936. *Malus* 'Athabasca', Award of Merit for ornamental fruit, Royal Horticultural Society.
1937. *Lilium davidii* 'Oriole', Award of Merit, Royal Horticultural Society, *Lilium* 'Lyla McCann', Award of Merit, Royal Horticultural Society.
1939. *Syringa prestoniae* 'Audrey', Award of Merit, Royal Horticultural Society.
1940. *Malus* 'Simcoe', Award of Merit, Royal Horticultural Society, for bloom.
1941. *Syringa prestoniae* 'Isabella', Award of Merit, Royal Horticultural Society.
1942. *Syringa* 'Maureen', Award of Merit, Royal Horticultural Society.
1945. *Malus* 'Simcoe', Award of Merit for ornamental fruit.
Lilium 'Coronation', First Class Certificate, Massachusetts Horticultural Society; Award of Merit, Royal Horticultural Society.
Lilium 'Brenda Watts', Award of Merit, Royal Horticultural Society
Lilium 'Edna Kean', Award of Merit, Royal Horticultural Society.
Lilium 'Hurricane', Award of Merit, Massachusetts Horticultural Society.
Lilium davidii 'Oriole', Vote of Commendation, Massachusetts Horticultural Society.
Lilium 'Grace Marshall', Vote of Commendation, Massachusetts Horticultural Society.
Lilium 'Phyllis Cox', Award of Merit, Royal Horticultural Society.

1946. *Syringa josiflexa* 'Bellicent', First Class Certificate, Royal Horticultural Society.
Lilium 'Hurricane', Award of Merit, Royal Horticultural Society.
Lilium 'Coronation', Award of Merit, Royal Horticultural Society.
Lilium 'Phyllis Cox', Award of Merit, Royal Horticultural Society.
1949. *Lilium* 'Lillian Cummings', Award of Merit, Royal Horticultural Society.
1951. *Lilium* 'Addington', The David Griffith Cup, North American Lily Society.
Syringa prestoniae 'Elinor', Award of Merit, Royal Horticultural Society.
1953. *Iris sibirica* 'Gatineau', Award of Merit, Royal Horticultural Society.
1956. *Lilium* 'Grace Marshall', Silver Medal, Toronto Horticultural Society.

Saturday, April 17

R. Transplanted Celery
Paris Golden Yellow Steele Briggs
28 flats @ 50 Plants
Golden Self Blanching OAC 8 flats

They & I Sowed all the apple & pear seeds
Many of apples had germinated

Various flats of Liliums all Cabbage &
Onions put-out into Cold frames.

Transplanted Pentstemon seedlings
Virginia Creeper

L. elegans atrosanguineum in bloom.

Mr Wells Transplanted Dusty Miller, Petunia
Chrysanthemums

One of Miss Preston's entries in her 1915 Daily Journal. (RBG I. Preston Coll.)

APPENDIX B

BIBLIOGRAPHY OF ISABELLA PRESTON'S WRITINGS

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APPENDIX C

CULTIVARS DEVELOPED BY ISABELLA PRESTON AT THE CENTRAL EXPERIMENTAL FARM (C.E.F.) OTTAWA: 1920 – 1947

CULTIVAR	LITERATURE CITED

Malus spp. Rosybloom Crabapples

Amisk	1
Arrow	1
Athabasca	3
Babine	1
Baskatong	3
Bernard	7
Brome	7
Chilko	1
Cowichan	1
Dauphin	1
Erie	1
Geneva	1
Harriman	7
Huron	4
Kingsmere	1
Louise	7
Makamik	3
Manito	1
Meach	1
Muskoka	1
Namew	3
Nipissing	1
Okanagan	1
Ponass	1
Rosseau	1
Scugog	1
Simcoe	1
Sissipuk	1
Slocan	1
Temiskaming	1
Tomiko	4
Vernon	7
Wabiskaw	1
Rideau	1
Richelieu	1
Rimouski	4
Skeena	4

Iris sibirica var. *maxima/I. orientalis* Snow Queen

Abitibi	1
Annapolis	7
Carling	7
Chaudière	1
China Blue	1
Dawson	7
Gatineau	1
Gwynne	7
Irving	7
Kenogami	4
Kootenay	1
Madawaska	1
Matane	4
Matapedia	4
Mattawin	1
Nipigon	1
Ottawa	1
Pembina	1
Pickanock	4

Syringa x prestoniae

Adriana	1
Alice	1
Andromache	7
Ariel	7
Audrey	1
Beatrice	1
Bianca	1
Blanch	1
Caliban	7
Calphurnia	4
Cassandra	1
Celia	1
Charmian	1
Cleopatra	7
Constance	1
Cordelia	1
Cressida	1
Desdemona	1
Diana	1
Dorcas	2
Elinor	1
Elizabeth	7
Emilia	1
Francisca	1
Gertrude	1
Goneril	7
Helena	1
Hermia	1
Hermione	7
Hero	1
Imogen	1
Iras	7
Isabella	1
Jacquenetta	1
Jessica	1
Joan	7
Julia	1
Juliet	1
Katherina	1
Lavinia	1
Lucetta	1
Luciana	1
Lychorida	7
Margaret	1
Mariana	1
Miranda	1
Nerissa	1
Oberon	4

Octavia 1
Olivia 1
Ophelia 1
Patience 1
Paulina 1
Perdita 1
Phebe 1
Phrynia 7
Portia 1
Puck 7
Redwine 8
Regan 1
Romeo 4
Rosalind 1
Silvia 1
Tamora 1
Timandra 1
Titania 1
Ursula 1
Valeria 1
Viola 1
Virgilia 9
Volumnia . . . . . *
W.T. Macoun 1

Syringa x *josiflexa*

Bellicent 4
Elaine 4
Enid 4
Geraint 7
Guinevere 4
Kim 4
Lynette 4
Royalty 8

Syringa x *hyacinthiflora*

Grace 4
Maureen 3
Muriel 3
Norah 3
Patricia 3
Peggy 3

Syringa (Other cultivars)

Coral 8
Dawn 8
Ethel M. Webster 4
Fountain 4
Nocturne 17
Swanee 10

Lilium spp.

L. x *davmottiae* Lady Byng 2,4
(*L.* x *davmottiae* was known also as "Ottawa Hybrids") 4

Lilium davidii

Oriole 4

Lilium - Stenographer Series

Brenda Watts 4
Edna Kean 4
Grace Marshall 4
Lillian Cummings 4
Lyla McCann 4
Muriel Condie 4
Phyllis Cox 4

Lilium - Fighter Aircraft Series

Corsair 4
Hurricane 4
Lysander 4
Mosquito 4
Spitfire 4
Typhoon 4

Lilium - Yellow-flowered Group

Addington with D.F. Cameron 11
Coronation 4
Sovereign 4

Lilium - Others

Fireglow 7
Simcoe(with D.F. Cameron) 5
Tigrimax 1,12
Yarmaska(with D.F. Cameron) 6

Rosa spp.

Algonquin 4,14
Agassiz 13,14
Amy Hedrick 3
Antenor 1
Ardelia 1
Caribou 4
Carmenetta 14
Chippewa 4
Conestoga 4
Cree 2
Erie 4
Grace 15
Huron 1
Iroquois 1
Langford 4
Lucasia 1
Micmac 4,14
Millicent 4,14
Mohawk 4,14
Nascapee 4
Ojibway 4
Orinda 1
Patricia Macoun 1
Poliarchus 4,14
Regina 1
Rosania 1
Silvander 1
U.P. Hederick 3,14
Valeria 1

Caragana

Caragana x *prestoniae* 16
Caragana x *prestoniae* 'Goldsprite' 18

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ADDENDUM

CLEMENT CHARLES TODD (d. 1828), AN EARLY NATURALIST AND BOTANICAL COLLECTOR IN UPPER CANADA[1]

James S. Pringle
Royal Botanical Gardens, Box 399, Hamilton, Ontario L8N 3H8

(Ref.: Canad. Hort. Hist. 1:15-27. 1986 ["1985"].)

Since this paper was published, I have encountered an obituary (Anonymous 1828) that established that Todd died at the home of his brother in London, England, 1 July 1828, aged 32. He held the rank of Surgeon in the Royal Navy at the time.

Literature Cited

Anonymous. 1828. [Untitled death notice.] The Loyalist [York, Upper Canada], vol. I, no. 14, September 13, 1828, p. 110.

BOOK REVIEW

American Gardens of the Nineteenth Century: "For Comfort and Affluence", by Ann Leighton. Amherst, MA: The University of Massachusetts Press, 1987. hardback, $50.75 Can., ISBN 0-87023-532-X; paperback, $22.50, Can., ISBN 0-87023-533-8.

When the late Ann Leighton (†1985) wrote the first two books in this series — *Early American Gardens: "For Meate or Medicine"* (1970), on the seventeenth century, and *American Gardens in the Eighteenth Century: "For Use of Delight"* (1976) — she did not plan a third. Eventually, intrigued by later material accumulated during her research on gardens of the colonies and the new republic, she decided to write about the 19th century, too. Due to the proliferation, during those years, of gardens, gardeners, garden designers, writers, and illustrators, horticultural products and their suppliers, and plants in cultivation, this was a particularly difficult task.

Leighton's final book is a necessarily broad and selective treatment of 19th century American gardens. It will nevertheless surprise and delight readers with the wealth of insights, details, and references so characteristic of all of her writing. This book follows the style of the earlier two in the series: intelligent and highly readable chapters, period illustrations, annotated lists of those plants in common use during the century, bibliographies combining primary and secondary sources, and indices, mainly of proper names. It will sit comfortably beside Charles Van Ravenswaay's *A Nineteenth-Century Garden* (New York; Universe Books, 1977), Patricia M. Tice's *Gardening in America, 1830-1910* (Rochester, NY: The Strong Museum, 1984), Edwinna von Baeyer's *A Selected Bibliography for Garden History in Canada* (Ottawa: Environment Canada — Parks, 1987), and the several recent books on British gardens of the Victorian period.

For Canadian garden historians, the new Leighton book differs from the earlier two in an important way; it has Canadian content, and even a chapter on Canada, "Northern Lights." While the author's decision to include Canada is laudable, her attempt to cover 19th century Canadian garden history in this 15-page chapter (plus a few mentions elsewhere) leaves vast areas of the country and long periods of time unaccounted for. Nor does it make clear the significant connections between gardening in Canada and in the United States. Many nineteenth century Canadians, like many today, had American relatives, friends, business associates, and professional colleagues. Postal services, not much slower than today's, made possible extensive correspondences on horticultural matters, exchanges of agriculture and horticultural books, periodicals, and catalogues, and gifts, trades, and sales of seeds, plants, and equipment. Canadian agriculturists, fruit growers, and foresters met their American counterparts at international meetings, and at fairs such as the 1876 Centennial Exhibition in Philadelphia. American landscape designers André Parmentier, Andrew Jackson Downing, Frederick Law Olmsted, and Calvert Vaux prepared plans for Canadian sites, while others such as H.A. Engelhardt and John Blair moved to Canada permanently. Leighton suggests none of these connections.

The Canadian chapter's introductory paragraphs make the 19th century landscape sound far more orderly and idyllic than settlers, travellers, agricultural journalists, and other critics found it. To further this impression of tidiness, Leighton includes nine illustrations of tidy residential landscapes from the post-Confederation Ontario county atlasses — stating, on page 272, that "it is doubtful that the artist dared to be less than exact." But as Canadian historians know,

the county atlasses could be anything but exact. Photographs from the period provided a truer view, but the author apparently chooses to avoid any use of this medium.

Designed landscapes, although they were not the norm, did exist all across the country by the end of the 19th century. Yet the examples given both in the text and in illustrations – with the exception of George Ackermann's c. 1870 rendering of the Holman garden at Summerside on Prince Edward Island – are all from Ontario and Québec.

The most disappointing aspect of the Canadian chapter is that Leighton cites at length only two 19th century Canadian gardeners – John Howard of Toronto, Ontario, and Annie Jack of Chateauguay Basin, Québec – and presents neither in the context of time and place. She quotes the home and garden activities recorded in Howard's journals for 1867-68, but mentions neither that Howard's journals exist from the 1840s on, nor that he was as interested in the forested landscape around his garden as he was in the flowers within it.

Leighton's statement, on page 238, that "little Greek temples on mounts would please some parts of the country—as see the Howards' garden in Toronto" is curious. The Howards' Colborne Lodge, which still stands, was conceived as a *cottage orné,* not a little Greek temple, and was built on a natural elevation with a clear view across Lake Ontario, not on a mount.

John Howard was a keeper of intriguing garden journals, but many other primary sources survive. Inclusion of a larger sample would have suggested the changes and developments in Ontario gardening during the century. There was, for instance, William Claus, whose detailed records of his garden at Niagara, Upper Canada, for 1806-10, 1818-19, and 1821-25 reflect the emphasis on fruit trees and vegetables typical of that earlier period. And, as already suggested, the sample should have had a broader geographical base.

Leighton's other Canadian gardener is Anne L. Jack who, as she points out, was the only woman included among horticulturists in L.H. Bailey's *Standard Cyclopedia of Horticulture*. (She does not point out that 12 male Canadian horticulturists were included, and that Linus Woolverton, who could have been, wrote Jack's and seven others' biographical sketches for the Bailey work.)

Leighton quotes several passages from what she describes on page 276 as "the 1910 reprint of an earlier edition" of Jack's *The Canadian Garden*. The first edition of the book appeared in 1903, and the book was a compilation of "Garden Talks" written, all after 1900, for *The Montreal Daily Witness*. Most of her other horticultural pieces were also published after 1900. Jack's writing, although charming yet well-grounded, was not as solidly a product of the 19th century as D.W. Beadle's. The latter's *Canadian Fruit, Flower, and Kitchen Gardener* was published in 1872; his horticultural writing and editing was continuous from the 1860s through the 1890s; and he succeeded his father in a nursery business established at St. Catharines, Upper Canada, in the 1830s.

Except for the cover, endpapers, and frontispiece, which did not show lawns, *The Canadian Garden* was not illustrated. To illustrate Jack's passage on lawns, therefore, Leighton selects a greensward from Frank Scott's *The Art of Beautifying Suburban Home Grounds* (New York: 1870). Although Scott's book was available in Canada, a more appropriate illustration for the chapter

on Canada would have been the equally-attractive greenswards on the back cover of William Ewing and Company's seed catalogue (Montreal: 1890), or in one of the many period photographs in Canadian picture collections.

Leighton is incorrect in her reference, in note 5 on page 206, to "...Mr. Jack of Montreal, whose wife's advice we have studied, also working at the [Arnold] arboretum." in Fact, it was John George Jack (1861-1949), a son of Annie and Robert Jack, who began to work at the Arnold Arboretum as a day laborer in 1886, contributed more than 175 articles to *Garden and Forest* between 1888 and 1897, and retired from Harvard University as an Assistant Professor of Dendrology in 1935.

This review has focused on clarifying Canadian information in *American Gardens of the Nineteenth Century* because the book's contributions to North American garden history will be widely read, quoted, and appreciated. Leighton's wish to write a chapter on Canadian gardens of the nineteenth century should convince Canadian garden historians, if convincing is needed, that the story should be told.

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Freelance writer
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Boyanoski, Christine. 1987. Loring and Wyle: sculptors' legacy. Toronto: Art Gallery of Ontario. 140 pp. ill. Softcover Can. $15.00. ISBN 0-919777-47-3. Available from the Book Shop, Art Gallery of Ontario, 317 Dundas Street West, Toronto, Ontario M5T 1G4.

This catalogue was prepared for the exhibition of the two Toronto artists, Francis Loring and Francis Wyle, which was held at the Art Gallery of Ontario in Toronto from 24 July – 18 October 1987. This retrospective exhibition showed 96 sculptures chosen from the Art Gallery's own collection and borrowed from public institutions and private persons. Many of the sculptures were designed for gardens and parks. All the displayed sculptures are fully described and illustrated in this handsome catalogue.

Lord, John B. 1980. *Aleksander Tamsalu 1891 - 1960. A botanist in exile,* Techn. Publ. no. 11. Hamilton, Royal Botanical Gardens. 127 pp. Ill. $3.50.

Aleksander Tamsalu was an accomplished botanist and ecologist who, until the Second World War, was well known for his work in plant community analysis in the Baltic state of Estonia. Forced to emigrate during the war, Tamsalu eventually found his way to Canada and to the staff of the Royal Botanical Gardens. Here, during the 1950s, he thoroughly studied the native plants of RBG properties and amassed a herbarium of nearly 10,000 specimens. He led a fascinating and tempestuous life, all recorded by Jack Lord in a 127-page biography published in 1980.

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Stothers, D.M., & R.A. Yarnell. 1977. An agricultural revolution in the lower Great Lakes. *In:* Romans, R.C., ed. Geobotany. New York and London: Plenum Press. pp. 209-232.

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Waterston, C.M. 1978. The Hermitage: an exercise in landscape reconstruction. M.Sc. thesis, University of Guelph. ix + 137 pp.

Journal article.

Schuyler, D. 1984. The evolution of the Anglo-American rural cemetary: landscape architecture as social and cultural history. J. Gard. Hist. 4:291-304.

Barker, W.G., I.V. Hall, L.E. Aalders & G.W. Wood. 1964. The lowbush blueberry industry in eastern Canada. Econ. Bot. 18:357-365.

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Bowden, W.M. 1976. A survey of wisterias in southern Ontario. Roy. Bot. Gard. Techn. Bull. 8. 15 pp.

Abbreviations of journal titles according to B-P-H, Botanico-Periodicum-Huntianum, Lawrence, G.H.M. et al. 1968, Pittsburgh: Hunt Botanical Library.

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